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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/520,015

12/29/2004

Hideki Kawamura

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2628

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EXAMINER

TAKAOKA, DEAN O

ART UNIT

PAPER NUMBER

2817

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/04/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/520,015

Applicant(s)

KAWAMURA, HIDEKI

Examiner

Dean O. Takaoka

Art Unit

2817

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15, 18-20, 28, 29, 32-34 and 42 is/are rejected.
- 7) ☒ Claim(s) 16, 17, 21-27, 30, 31 and 35-41 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15, 18, 19, 28, 29, 32, 33 and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Ruby et al. (US 6,472,954).

Claims 15 and 29.

Ruby shows a branching filter comprising: a transmitting filter; and a receiving filter; wherein piezoelectric thin film resonators defining the transmitting filter (68) and the receiving filter (73) and including at least one piezoelectric thin film sandwiched between at least one pair of opposed electrodes are arranged in a ladder configuration on an opening or a recess of a substrate (Fig. 5), the transmitting filter and the receiving filter being connected to an antenna terminal in parallel; and the piezoelectric thin film resonators defining the transmitting filter and the piezoelectric thin film resonators defining the receiving filter are made of different materials from each other (c8, lns 33-35).

Claims 18 and 32.

Wherein the material of the electrodes is different between the piezoelectric thin film resonators defining the transmitting filter and the piezoelectric thin film resonators

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defining the receiving filter (c8, Ins 33-35 as drawn to electrode layers Ins 18-28).

Claims 19 and 33.

Wherein the acoustic impedance of the material of the electrodes is different between the piezoelectric thin film resonators defining the transmitting filter and the piezoelectric thin film resonators defining the receiving filter (inherent where Ruby teaches weighted thicknesses of the electrode stack inherently providing different acoustic impedances – c7, Ins 5-14).

Claims 28 and 42.

A communication device comprising the branching filter (Fig. 4).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 20 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruby et al.

Claims 20 and 34.

Ruby teaches the branching filter above comprising transmitting and receiving filters wherein the frequency of the pass band of the receiving filter is higher than the frequency of the pass band of the transmitting filter (c2, Ins 55 and 67 where Tx = 1880MHz and Rx = 1960MHz) but is silent where the acoustic impedance of the

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material of the electrodes defining the receiving filter is higher than the acoustic impedance of the material of the electrodes defining the transmitting filter.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified the electrodes disclosed by Ruby such as claimed where the modification would have been obvious where Ruby teaches the electrode materials of the Tx and Rx filters may be different (c8, Ins 33-35), further teaching desired coupling coefficients for the Tx and Rx filters (Tx c7, Ins 57-60 and Rx c8, Ins 14-17), thus suggesting the obviousness of the modification.

Allowable Subject Matter

Claims 16, 17, 21 – 27, 30, 31, and 35 – 41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dean O. Takaoka whose telephone number is (571) 272-1772. The examiner can normally be reached on 8:30a - 5:00p Mon - Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Pascal can be reached on (571) 272-1769. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

A handwritten signature in black ink, appearing to read "David J. Kaula". The signature is fluid and cursive, with a large initial "D" and "K".

dot

March 27, 2007